

ANNOUNCEMENT

Vortragsankündigung

Montag, 19. Juni 2023, 15 Uhr im HS II

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“Materials with nanometer-size pores: New opportunities for healthcare and sustainable technologies”

Among nanomaterials, those containing nanoscale pores, *i.e.*, nanoporous materials, are of great interest for potential application as selective sorbents, solid catalysts, or nanocarriers for biomedical technologies. Especially, ordered nanoporous materials offer significant advantages due to their very high specific surface area and well-calibrated pores large enough to perform reactions or processes involving adsorption and diffusion of bulky species. In addition, there are many methods to modify their surface properties, introduce functions and control the morphology of the particles. This overview lecture will present current synthesis concepts for the design of functional nanoporous organic-inorganic hybrid materials that could offer interesting prospects for separation technologies and nanomedicine. We will discuss the development of mesoporous silica nanoparticles (MSNs) with enhanced biocompatibility, and controlled drug release and targeting ability, for their use as smart drug nanocarriers. Further, surface-functionalized nanoporous powders, monoliths, and composite aerogels will be used as selective sorbents for pollutant removal and critical materials recovery.